

The University of Chicago

AN ECOLOGICAL STUDY OF INSANITY IN THE CITY

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE
SOCIAL SCIENCES IN CANDIDACY FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF SOCIOLOGY

1931

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ROBERT E. L. FARIS

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AN ECOLOGICAL STUDY OF INSANITY IN THE CITY

The purpose of this study is to show the relationship between the ecological order of a large industrial city and the incidence of insanity, and to discover as far as possible the explanations of this relationship. It is known from previous studies that each large expanding industrial city has a pattern which is the result of competition, and that this unplanned pattern contains elements which are related to various forms of social and personal disorganization. Certain parts of the city, called "natural areas" because they result not from planning but from impersonal forces, have invariable social characteristics which remain in these areas regardless of which race or nationality inhabits the areas, and regardless of the passing through of streams of different populations. The areas that have high rates of crime and delinquency, vice, family disorganization, suicide, and other forms of disorganization have them because of certain types of community disorganization, which appear ultimately to have an ecological basis.¹

The industrial metropolis grows principally from the immigration of wage earners. In the United States these have consisted largely of European peasant populations or of Negroes from the southern states. For the most part these new immigrants settle in the zone of the city which surrounds the central business and industrial sections. Here they may reside in proximity to the industries they will work in, and here they may find dwellings for which they can afford to pay the rent. The rents are the lowest here of any part of the city, because the buildings remain unimproved, as the land is being held in speculation in the expectation of further expansion of the nearby industrial region.

¹R. E. Park and E. W. Burgess, The City (Chicago, 1925); C. R. Shaw et al., Delinquency Areas (Chicago, 1930); C. R. Shaw and H. D. McKay, Report on the Causes of Crime (Washington, D.C., 1931); W. C. Reckless, Vice in Chicago (Chicago, 1934); E. R. Mowrer, Family Disorganization (Chicago, 1927); R. S. Cavan Suicide (Chicago, 1928); and other volumes in The University of Chicago Sociological Series.

In this "zone of deterioration" resides this mass of immigrants, new to the city, and often new to city life. These people have been torn from their roots in another land and have settled in a strange type of place, doing a strange type of work, and living among a strange type of people. The community disorganization here has several aspects. The mobility and the heterogeneity of the population discourage or prevent the formation of neighborhoods of the type which are found in small towns and rural villages, except in those cases where a nationality group is able to form its own community life, as the Jews have often done. The conflict of cultures between the old peasant and the new urban settings is another disorganizing feature, and is related to a parallel conflict between foreign-born and first generation native-born population classes. In the "hobo" and rooming-house areas there are special forms of disorganization related to the high mobility of the populations.

The relationships between the various forms of personal disorganization and the underlying social disorganization seem to be not merely general and vague, but capable of precise definition. Cavan's study of suicide, for example, does not trace this form of personal disorganization to the same process that Shaw finds to explain juvenile delinquency. The explanations are different for each type of personal disorganization.

The first step in this study of insanity is to examine the distribution of insanity in the city to see whether the incidence is evenly distributed, or whether it is concentrated in certain sections. For this purpose a sample of cases was first drawn from the Chicago Psychopathic Hospital.¹ The addresses of all the cases for the year 1930 were sorted into the seventy-five local communities of Chicago. The total in each community was divided by the 1930 population of the community to furnish an insanity rate for that year.² Expressed in terms of 100,000 persons, the

¹The Chicago Psychopathic Hospital receives and examines all the patients which are later sent to state hospitals from the city of Chicago. The records at this hospital, then, include all of the insane cases from Chicago which get into the state hospitals.

²The cases used in this sample are those first admissions between the dates of September 1, 1929, and August 31, 1930. This selection makes the month of taking the census, April, the middle point of time interval, and so makes unnecessary the correction for increase of population. Cases diagnosed as "drug addicts"

rates varied from 19 to 828, with an average of 105 for the city as a whole.

The highest rate in the city is in the community of which the central business district is a part. In general the rates are progressively lower as the distance from this central area increases. The exceptions to this generalization are slight and without known significance. The high rate areas include the central "zone of deterioration" where the foreign-born populations reside, the "hobo" and rooming-house areas, and the Negro rooming-house and apartment-house areas. The low rate areas are the outlying residential areas, including the suburban zone, the areas in which single houses predominate, and the areas of the more expensive apartment-houses.¹ Thus it is clearly evident that there is at least a crude association between the high rates of insanity and the parts of the city in which social disorganization is greatest.

The case for this association is not complete, however, until certain possibilities are examined. There is, to begin with, the possibility that the concentration of high rates in the central sections of the city is accidental. Since the interpretations are to be based on the point of differences between rates in the central districts and those in outlying districts, it is necessary to examine the possibility of these differences occurring by chance fluctuations of rates alone. This point was suggested by F. A. Ross in a discussion of this research project.² Using a formula to

without other psychosis, those marked "not insane," those with out-of-town addresses, and those for which no addresses were given were omitted from this sample. The total number was 3,205.

¹This original study, completed in 1931, was later greatly extended by a project in which a number of persons took part. The results are published in a volume of the University of Chicago Sociological Series (Robert E. L. Faris and H. Warren Dunham, Mental Disorders in Urban Areas [Chicago: The University of Chicago Press, 1939]). The results in this later study are in complete agreement with those in the present study. Where the larger study is referred to below it is designated as "the 1939 study." In it a much larger number of cases were used, the statistical treatment was much more elaborate, and material from another city, Providence, Rhode Island, was added. The facts were more firmly established in this larger study, but were virtually unchanged, and the interpretations remain the same.

²F. A. Ross, "Ecology and the Statistical Method," American Journal of Sociology, XXXVIII (January, 1933), 507-22.

test the chance variation of a rate, he tested whether each rate was significantly different from the rate in an adjacent community. In some cases he found differences to be not significant, and in other cases he found that they were. By combining two communities and computing a rate he was able to show more definitely that the concentration of rates could not be due to chance alone, thereby furnishing the answer to his own criticism. The logic of Ross's original point has been questioned by C. C. Peters,¹ who pointed out the fact that many rates combined into a pattern greatly increased the statistical significance of the pattern itself, and that the possibility that chance variation alone could produce such a pattern is too small to be considered. Since the conclusions in this study are drawn not from contrasts between pairs of adjacent areas, but from total patterns, this point seems adequately taken care of by Peters' statement. In the subsequent study, however (the 1939 study), much larger numbers were used, further decreasing the possibility that the patterns could be due to chance.

A second possibility is that the patterns of rate distribution represent only a concentration of cases of insanity which have been institutionalized because of poverty. If the actual incidence of insanity is equal in all parts of the city, and if those in the higher-income classes are more frequently cared for at home or sent out of the state, the hospitalized cases would show a bias toward the lower-income classes and therefore toward the slum section of the city. An attempt was made in the 1939 study to minimize this bias by including in the rates all the cases from the regional private hospitals as well as from the public hospitals. Because of the small number of patients in the private hospitals, the rates were only slightly affected by the addition of these cases. No way has been found to estimate the amount of bias in the rates caused by the practice of caring for some of the patients in their homes. It is possible that there is an income selection in such cases. But it appears unlikely that such an effect dominates the patterns of distribution, because of the fact that different psychoses show different patterns of distribution--a fact which was most clearly established in the 1939 study. If a poverty concentration were the only, or the principal, factor in

¹Charles C. Peters, "Note on a Misconception of Statistical Significance," American Journal of Sociology, XXXIX (September, 1933), 231-36.

producing these patterns, the patterns should be reasonably similar for all psychoses.

Another possibility is that the apparent concentration of cases is due to a statistical error or failure to adjust the rates for transiency. That is, if the cases from an area taken during the period of a year are divided by the population taken as of a single day, the rate may be regarded as too high if the population during the year had turned over enough to make a significantly larger population than was present on the one census enumeration day. No satisfactory method has been found in this study to settle this point. It is well known, however, that in the hobo and rooming-house areas, which show very high rates for several types of mental disorder, the population is transient enough to turn over, perhaps two or three times or more. An obvious adjustment would be to reduce the rates in such sections to one-half or one-third. To justify this, however, it would be necessary to know where the excess population was during the rest of the year, and to know what the chances of hospitalization were at those places. Only if it is true that the other cities and towns in which this transient population spends a part of the year do not take their quota in their hospitals, should the rate be adjusted. In the present state of our knowledge, a reduction of these rates is therefore no more certain to reflect the true incidence than the unchanged rates. Even if the rates in the hobo areas were reduced to one-half or one-third, they would still be among the highest rates in the city. The evidence cited above, of the different distributions of the different psychoses, is contrary to the idea that this mobility error is responsible for the centralized pattern of high rates. The catatonic schizophrenia rates, for example, are very low in these transient hobo areas, and highest in areas which have less mobility.¹

An interpretation frequently made of the concentration in the center of the city of insanity rates, is that persons who are mentally abnormal fail in their economic life and consequently drift down into the slum areas because they are not able to compete successfully with normal persons. Such a process is certainly possible, and it seems quite likely that it must occur to a

¹The following table, kindly contributed by Professor E.W. Burgess, shows that, while there are differences in mobility in the different areas, they are not so great as has been assumed. The figures are for 1934, and should be interpreted in view of

certain extent. It is, however, unsatisfactory as an explanation of the concentration patterns of rates, for several reasons. In the 1930 data, the manic-depressive cases did not appear to be centralized at all. The 1939 study confirmed this observation satisfactorily. A study, not yet published, by H. Blumer and H. W. Dunham in 1938 showed that most of the catatonic schizophrenic patients from foreign-born communities, where the catatonic rates are highest, were persons who were born and brought up in those communities, not persons who drifted from some other areas because of economic failure. In view of the fact that cases are committed from all parts of the city, including some from the high-income areas, it is clear that persons may develop insanity serious enough to require hospitalization, without incurring a serious enough failure to necessitate a drift to the slums. In the 1939 study, a comparison of the younger (those between the ages of fifteen and twenty-nine years at first commitment) and the older (those between the ages of thirty and sixty-four at first commitment) paranoid schizophrenics revealed rate patterns so similar that it constitutes evidence against the hypothesis that such drifting is responsible for the patterns. If drifting took place on a noticeable scale, the older group, having had more time to

the fact that they were for a depression year.

Percentage of Families by Length of Residence
Under One Year and Ten Years and Over
by Residential Areas in Chicago

No.	Type of Residential Area Name	Length of Residence	
		Under One Year Per Cent	Ten Years and Over Per Cent
1.	Single home and two-flat, \$50 and over.	21.62	20.75
2.	Single home and two-flat, under \$50 ...	19.24	23.16
3.	Two-flat and single home, \$50 and over.	24.78	29.84
4.	Two-flat and single home, under \$50 ...	22.52	26.41
5.	Apartment house and two-flat	24.27	27.71
6.	Apartment house (foreign-born)	28.82	22.71
7.	Apartment house (native-born, white) ..	33.42	17.37
8.	Apartment house (Negro)	39.12	15.58
9.	Hotel and apartment hotel	39.75	9.91
10.	Tenement and rooming-house	24.24	8.52
11.	Rooming-house	36.60	23.15
	All areas ..	27.64	20.75

drift, should show a sharper concentration in the most deteriorated sections of the city. At the same time, a comparison of the young and old catatonic schizophrenic groups revealed some evidence of a certain amount of drift. This was not so much from the higher-income areas to the lower-income areas, but from the foreign-born slums to the hobo areas. This is the only direct evidence of drift, and the conclusion seems warranted that the hobo areas are the only ones where the high rates may be partly due to the drift of economic failures into them. Inasmuch as the pattern of concentration shows a gradation through all the types of areas in the city, this drift accounts only for a very minor part of the whole configuration.

Another possible interpretation of the concentration of rates is that the central areas of the city are inhabited by racial and nationality groups of inferior biological stocks. If the Jewish, Polish, Lithuanian, Italian, Negro, and other recent immigrant groups have higher racial tendencies to insanity than English, Scotch, German, Irish, and Scandinavian, the incidence would produce a pattern of rates with a concentration in the central parts of the city. Examination of the rates for the Negro and Jewish groups in Chicago, however, indicates that the rates for these groups vary according to the nature of the sections in which they live. In the 1930 data, the rates of all insanity in three adjacent areas occupied predominantly by Negroes varied from 288 in the area nearest the center of the city, to 233 in the next area, and 132 in the area farthest out. A more refined analysis in the 1939 study further bears out the fact that the variation of rates by areas is far greater than the variation by race. The schizophrenia rate for the city as a whole, based on 10,575 cases which were admitted between the years 1922-1934 inclusive, and expressed per 100,000 adult population, is 33.6. The Negro rate for the city in the same period is 41.4--a significant but not large difference. The variation of Negro rates according to different sections of the city, however, extends from 34.0 to 95.5--a very large difference. Since more of the Negroes than of the native-born white populations live in deteriorated areas, it is possible that if the area factor could be equalized for the two groups, there would be no racial difference in incidence of insanity at all. Such an adjustment is difficult to make, however, since it is not the same environment for the white person who lives

in the Negro area as it is for the Negro person in the same area, or even for the Negro person living in an area settled predominantly by whites. In the 1939 study it was shown that the schizophrenia rate for white persons living in the Negro areas was very much higher than the Negro rates in the same areas, while the Negroes living in the white areas had higher rates than the whites had in those areas. Similar data for manic-depressive psychoses, alcoholic psychoses, general paralysis, and senile psychoses, in the 1939 study, showed that the variations of rates by areas were much greater than the variations by race or nativity groups. In view of these facts it is clear that no valid comparison of rates of racial or nationality groups can be made until some means is found of holding constant the area factor. In the light of the above results, the supposition is most probable that there are no racial differences in the tendency to insanity.

In the 1930 study, an effort was made to study the variations in the Jewish rates. Although the difficulties involved made this part of the study less satisfactory than the study of Negro rates, the results are harmonious with the above conclusions concerning racial tendencies to insanity. Since the Jewish population does not occupy such large and compact areas, and since the Jews are more free to move into new areas than are the Negroes, we do not find them occupying exclusively such large areas as do the Negroes. Nor do all the Jewish districts lie adjacent to one another.

There were, however, six districts in which there were enough Jews to permit computation of some sort of rate for the districts. These districts are all local communities or combinations of local communities. Since the census has no accurate method of estimating the number of Jews in a district (the only relevant information being the country of birth), it was necessary to find some other means of estimating the number. Fortunately for this purpose, Ruth S. Cavan, in the course of a study of family life, had been able to estimate the percentage of Jews in these areas from data taken from questionnaires given to high-school students in these areas. Although one could wish for better estimates, this is likely to be the best one available. From the 1930 population of these districts, and this percentage, the number of Jews in each of the six districts could be estimated, and then by dividing this into the number of Jewish cases, it was

possible to obtain a Jewish insanity rate for each of these districts.¹

These six Jewish districts are not all adjacent to one another. Four of them form a block near the central part of the city, one is in the South Shore residential district, and one on the northern edge of the city in another residential district. The four districts in the center have rates much higher than the other two; which is consistent with the rate patterns for insanity in the entire population. The rates for the South and North Side residential areas were, respectively, 30 and 24, per 100,000 population. The rates in the other four areas were 53, 39, 70, and 59. In these four districts, the rates are higher in those two which are the farther from the center. This inconsistency might be due to chance, or to inaccuracies in the estimating of the number of Jews in the districts, or to some other error. It is also possible, though, that this reflects the fact that in the case of the Jews, the areas of second settlement are more disorganized than the areas of first settlement. Perhaps the Jew has been able to preserve his old culture and solidarity in the ghetto and in the first settlement areas; and begins to encounter social disorganization when in the second settlement areas he tries to get away from his own people; tries to break into the "outside world." Though not very satisfactory standing alone, this evidence based on the Jewish rates is of value as it harmonizes with the above evidence that variations of rates by area are more significant than by race, and at least that the pattern of concentration of rates in the central areas of the city is not to be explained as a consequence of higher tendencies to insanity in certain racial and national populations.

The evidence presented up to this point in the discussion has shown that there is a marked concentration of high rates of insanity in the center of the city, and that the evidence bears strongly against the interpretation that the pattern is the result of accidental variation, selection on the basis of poverty, a statistical error due to lack of adjustment of rates for transiency,

¹The predominantly Jewish districts as determined by Dr. Cavan's study are also those which were determined by a study of Jewish Population of Chicago, 1931, by Community Areas and Census Tracts (Chicago, 1934), made by W. Abraham Goldberg, by finding the number of abnormal absences of public school children on Yom Kippur, a Jewish holy day.

a drift of economic failures to slum regions, or the racial characteristics of the populations that inhabit these central regions. The remaining possibility to be discussed is that there are factors in these areas which are causally connected with the high incidence of insanity in them. It may be that some of the extreme aspects of social disorganization known to be characteristic of the central sections of the city in some way affect the mentality of the persons residing in them so that a high rate of personal or mental disorganization results.

If this hypothesis of causal connection between social disorganization and insanity is correct, it is to be expected that the different types of insanity should be related to different aspects of social disorganization, and that perhaps some types which are believed to have causes which are not closely related to experiences of the person should not show much apparent connection with the social disorganization of the city at all. The classification of types of insanity is presumed to be based on the idea of different entities with different causes, so these might be expected to show different patterns of distribution in the city.

In the 1930 study only a partial examination of these different psychoses was made; that is, instead of computing rates for each separate psychosis, the study was limited to the examination of rates of some separate psychoses and some groupings of psychoses. Specifically this included (1) psychoses associated with organic diseases, such as paresis, arterio-sclerosis, and others; (2) "hereditary psychoses," that is, psychoses which seem most likely to be primarily hereditary in nature, including in this case only epilepsy and Huntington's chorea, senile psychosis, manic-depressive psychosis, and schizophrenia. More elaborate study of each was made in the 1939 study, but the results were not changed--only confirmed and made somewhat more precise.

The high rates of the psychoses associated with organic diseases, in the 1930 study, were concentrated in the central hobo sections, the Negro districts, and the rooming-house districts. Since the large majority of these cases are diagnosed as paresis, the pattern is dominated by this type of insanity. Although the immediate cause of paresis is syphilitic infection in the brain, it seems that the pattern of distribution of rates in the city is related to factors that bring about the spread of this infection. Unpublished studies of the distribution of deaths

due to venereal diseases indicate that the regions with high incidence of these deaths is similar to the distribution of high rates in the "disease group." These are also the regions in which the majority of the patrons of houses of prostitution reside, according to the evidence of Reckless.¹ The hobo and rooming-house areas, and the Negro apartment- and rooming-house areas are regions in which there is little family life, and in which the sex experience of the men consists in large part of casual contacts and contacts with prostitutes. The connection between the social disorganization of the area and the high incidence of paresis appears to be through this condition. The larger sample of paresis cases studied in the 1939 study furnished rates which were in close agreement with those of the 1930 sample.

The group designated "hereditary psychoses" was selected for special study since it offered an opportunity to test the hypothesis of causal connection between the other psychoses and the social disorganization of the central areas. If the concentration of high rates is due to some statistical illusion, the "hereditary psychoses" should show patterns of distribution similar to those of other psychoses. This test could only be partly satisfactory, due to the lack of certainty as to what psychoses should be classified in this group, and due to the small number of cases necessarily involved. In order to increase the size of the sample, all the cases of epilepsy and Huntington's chorea for ten years, 1920 to 1930, were used; but even with this sample only 86 cases in all were found--too few to justify the computation of rates. Spotting of the cases on a map of the city shows, however, a fairly even distribution. Since the population is much more dense in the central portions, this suggests that a larger sample might show not only no concentration but perhaps lower than average rates in the central sections. As the matter stands, however, the result can only suggest that the "hereditary psychoses" are differently distributed from some of the other psychoses.

For an examination of the distribution of the manic-depressive psychosis it was necessary to add to the 1930 sample of cases those from the years of 1920 and 1927, the only two years from which it was convenient to get cases at the time this study was

¹W. C. Reckless, Vice in Chicago (Chicago: The University of Chicago Press, 1934).

made. The larger sample taken for the 1939 study gave more precise but confirmatory results. The 280 cases in this first sample were insufficient for the computation of rates, but spotted on a map they showed a wide dispersion, which suggests little if any concentration. A slight suggestion of concentration along the lake front north of the center of the city is the only very visible exception. This region is primarily hotel, apartment hotel, and apartment-house area. It suggests that the mobile areas of the higher economic classes may have a slight relation to the incidence of manic-depressive psychosis. The distribution is clearly not the same as that for all types of insanity added together, and not the same as that of schizophrenia, as is shown below. In the 1939 study a number of tests were made to establish this fact of difference between these two psychoses, with uniform results indicating a clear difference, with the manic-depressive cases distributed always in the more nearly random pattern.

The lack of a clear pattern for the manic-depressive rates means that no interpretation on the basis of connection between social disorganization and personal disorganization is called for, or even possible on this evidence alone. If a high degree of concentration of other psychoses is evidence against an important degree of hereditary determination in them, it must be said that the lack of concentration of the manic-depressive rates leaves more room for a hereditary interpretation--although such an observation by itself can scarcely be said to constitute evidence for hereditary determination. Random occurrence of a phenomenon in a population is not much evidence either for or against heredity. The nearly random pattern of rates does have a value in this study, however, as it strengthens the interpretation of other concentrations of psychoses by contrast.

In the 1930 sample there were only 255 cases of senile psychoses--too few to form the basis of reliable rates. When spotted on a map they showed a fairly wide, almost random, distribution. At the time this study was made, census data for the communities within the city were not available by age groups; consequently it was not possible to make any kind of adjustment for age--an adjustment which is particularly important for the senile psychoses. In the 1939 study, however, 1,118 cases were used as the basis of rates, based on a population of the ages of sixty-five and older, and in this case a definite concentration appeared. The rates were

highest in the Negro areas, and in the rooming-house and tenement areas. Elsewhere they were much lower--there being a definite gap of separation between the high- and low-rate parts of the city. This high rate in the Negro areas does not indicate a higher Negro susceptibility to the psychosis, as the rates for all classes of white populations were also very high in the Negro areas--in fact, higher than the Negro rates in the same areas. Apart from the relationship of these rates to poverty, no interpretation is suggested to link senile psychoses causally to the social disorganization of the city.

The most frequent diagnosis in the Chicago hospitals is schizophrenia. In the 1930 sample, 1,071 cases, or 34.3 per cent were so diagnosed. Since these cases form more than a third of all of them, they naturally dominate the distribution of all insanity combined. It is therefore to be expected that the pattern of schizophrenia rates resembles the pattern of all types combined, and such turns out to be the fact. The highest rates of schizophrenia are for the most part in or near the center of the city, including the central hobo areas, the rooming-house areas, and the foreign-born slum regions. The outlying residential areas all had low rates. The concentration appears to be very definite and sharp.

The 1939 study gave very satisfactory confirmation of the above results concerning the distribution of schizophrenia rates, and added some new points. There were, in this sample, 7,253 cases. The rates range from 111 (per 100,000 adult population) in a high-rental apartment-house district, to 1,195 in the central business district and hobo area. The other hobo areas and the central rooming-house areas have very high rates. Rates above the average are also found in the first-settlement immigrant communities near the center of the city, and in the deteriorated parts of the Negro area immediately south of the central business district. The lowest rates are in the outlying single-home residential districts. Separate distributions of rates for males and females were made, and the results were virtually identical except that in the central hobo area the female rate was low.

In the 1939 study certain refinements were made possible by grouping all the communities in eleven classifications, based on similarities in the types of housing. This made it possible to have rates based on larger numbers without losing too much of the range of contrasts between types of communities. One valuable

use of these groupings was the computation of a set of foreign-born rates of schizophrenia. The variations of the rates made by dividing the foreign-born cases by the adult foreign-born population was as great as the variation of the rates of schizophrenia for all classes of population, and the rates were closely parallel for the two classifications of population. Thus it is clear that the foreign-born frequency is not an important factor in determining the concentration of schizophrenia rates.

In similar fashion rates for the eleven groupings of areas were computed for the schizophrenics of the following population types: native white of native parentage; native white of foreign or mixed parentage; foreign-born white; total white; Negro; other races. From the comparison of these a result was obtained which appears to be a significant contribution to the interpretation of the schizophrenia rates. With some qualification, it can be said that the schizophrenia rates are high for any population outside of the region in which that population is in the majority. For example, although the schizophrenia rate for Negroes is high, and the schizophrenia rate in the Negro areas is high, the rates for Negroes are high only for those Negroes who live outside the Negro districts. The high rates are contributed by white persons who live in these areas, where they constitute a small minority of the population. The rates for native whites are low in native white areas but are high in foreign-born areas, and rates for the foreign-born are low in their own areas but very high in the Negro areas. The rooming-house areas have such a heterogeneous population that no group is in the majority, and the rates for all of these groups are high there. In no case is the rate extremely high for any of these population classes in the areas in which they are in the majority. Although the isolation hypothesis developed for the interpretation of the schizophrenia findings was worked out before this result was obtained, it gained added support by this result.

Another refinement of the 1939 study, made possible by the large number of cases, was the study of the types of schizophrenia. This study yielded further confirmation of the knowledge that the rates of the psychoses are causally connected with the conditions of social disorganization in the city. The principal fact of significance is the clear difference in the distributions of these three types. The paranoid type is sharply concentrated in the central hobo and rooming-house regions, with somewhat lower rates in

the foreign-born slum areas, and even lower rates in the outlying residential areas. The catatonic type is just as sharply concentrated, but not in the same areas. For this diagnosis, the rates in the central hobo and rooming-house areas are very low, and the highest rates are in the foreign-born areas, but not consistently in those closest to the center of the city. The rates of the hebephrenic type are somewhat intermediate, but resemble the pattern of the paranoid rates more than that of the catatonic rates. The contrast between the patterns of the paranoid and the catatonic types is measured by the low coefficient of correlation between the two sets of rates (using the Pearson R), which is .11 with a standard error of .12. It is further shown by the correlations of these rates with the percentages for each area of hotel residents and lodgers. This correlation for paranoid rates is high; being .82 with a standard error of .04--indicating a high relationship between these rates and the mobility of the population in the city. The correlation for hebephrenic rates is intermediate; .57 with an error of .08. The correlation for catatonic rates is a low negative; being -.29 with an error of .11--indicating no positive relation to mobility. On the other hand, the catatonic rates show a high relation to the percentage of foreign-born and Negro populations in the different parts of the city, while the other types show intermediate and low relationships. The correlations are: for catatonic rates and foreign-born-plus-Negro percentages, .86; for hebephrenic, .40; and for paranoid, .11. This does not mean that the catatonic cases are necessarily more frequent in the foreign-born or Negro populations, but merely more frequent in the same areas where those populations are also frequent.

The remaining part of this discussion will deal with the explanation of the concentration of schizophrenia rates, and will show the evidence for the hypothesis of a causal connection between the social disorganization of the central parts of the city and the personal disorganization of the schizophrenic patient.

The ancient problem of the nature of the relationships between mind and society is involved in this effort to interpret the schizophrenic rates. Although there is more than one solution or attempted solution to this problem, some are of little help in the present task.

One point of view, somewhat old but still alive, regards the mind as nothing more than a physiological mechanism. The causes of its origin, its individuality, and its abnormalities are all supposed to lie in physiological processes alone. The level of intelligence is thought to be determined by heredity and by modifications and pathologies in the nervous system. Mental diseases are defined as pathological conditions resulting from bodily disturbances, in the same sense that typhoid and tuberculosis result from bodily disturbances.¹ Research methods based on such a point of view consist of attempts to locate physiological defects, and treatment consists of attempts to repair the defects. From this point of view, life history studies showing the relation of experience to the development of behavior are of minor significance at most.

Although much brilliant and distinguished work has been done on this basis in the study of mental disorders generally, and some significant victories won, there are some characteristics of human mentality and behavior that have not so far been successfully explained by this approach. In the research on schizophrenia, there is no general success in establishing an explanation on this basis; although some, while granting this fact, still expect that the ultimate solution will be on this level,² among many others there has developed a growing realization that the complete explanation of some of these forms of mental phenomena will not be found on a physiological level. At the same time, a growing body of knowledge on the relation of socio-psychological factors to mentality and behavior has been accumulating and yielding promising results. The following interpretation is built on this latter basis, although it is recognized that certain interactions between the social and physiological factors are possible and probable.³ That the human mind is built on, and is never independent of, a

¹This point of view is expressed by Fred A. Moss and Thelma Hunt, Foundations of Abnormal Psychology (New York: Prentice-Hall, Inc., 1932), p. 21.

²Walther Spielmeier, "The Problem of the Anatomy of Schizophrenia," Schizophrenia. Association for Research in Nervous and Mental Diseases, Vol. X (Baltimore: Williams and Wilkins Co., 1931).

³In an introduction to the published volume on the 1939 study, Professor E. W. Burgess suggests some of the possibilities of these interrelations.

physiological base cannot be denied. But although this base is an absolutely necessary element, it is not co-extensive with the mind itself. The mind, built on a physiological base, is a product of social interaction. Mentality, abilities, behavior are all achievements of the person, developed in a history of long interaction with his surroundings, both physical and social.

Membership in society is, of course, necessary to life itself. Except for rare and apocryphal cases of "feral men" cared for by animals, no human beings survive without many years of care by other humans. Every human society provides some organized system for taking care of infants and for providing for the development of knowledge and behavior of infants, children, and youths. Moreover, every society bears and transmits a body of ways of acting, thinking, and feeling, which provides a framework in which the mentality and behavior of each new member is developed. In order that persons may act together and co-operate at all, it is necessary that such a framework exist to mold the nature of each member. Some system of gestures and language is essential to communication. Folkways are necessary in order that each person will know what to expect of others. Not only does every society possess such an organized system of action patterns, but each also possesses many mechanisms of social control by means of which it is insured that the members of the society will conform to these essential patterns. Both must function to insure the successful development of the person and the perpetuation of the society.

Normal mentality and behavior develops over a long period of successful interaction between the person and these organized agencies of society. Defects in mentality and behavior may result from serious gaps in any part of the process. The failure of society to transmit language, for example, or even partial failure through parental neglect of children, results in mental retardation of the children. Among the necessary elements in the process of development of the child are such subtle conditions as intimacy and affection between the child and the members of his primary groups, reasonable consistency of the influences to which he is exposed, and reasonable harmony between the influences in the home and those met in more formal situations outside the home. It is probable that there are many more unrecognized requisites of this sort. A failure in any one of them damages the development of the

normal mentality and behavior. For example, in family situations that lack sufficient intimacy and affection, the amount of transmission from parent to child is lessened, with resulting retardation which may be significant. Inconsistency of influences may so discourage the child that he may feel that it is useless to make any effort to understand the world about him and tempt him to fall back on simple traditional formulae of behavior, on magic, or intuition, or on his own illogical whims and impulses. Where there is lack of harmony between the family and community influences, there is likely to be conflict in the person with resulting confusion, or else he is likely to discount or devalue one or the other source, thereby cutting down the quantity of developing influences.

There is some evidence, as will be shown below, that even a normal adult mentality is not equipped to continue under its own power, but that it must be supported constantly by a consistent and fairly harmonious stream of primary social contacts. Persons who have been isolated, through physical or cultural barriers, are shown to have undergone a personality deterioration which frequently has continued as long as the isolation lasted.

To summarize: the development of normal mentality and normal behavior demands a complicated chain of successfully functioning elements on paths of very different sorts. Among the essentials are: paths of social communication involving both printed and spoken language transmitting influences from the community at large to persons, and from persons to intimate friends; paths of physiological communication, including sense organs, nerve paths connecting with centers, all supported by sufficiently normal functioning of many parts of the body, including glands, muscles, etc.; and outgoing activity of the person in responding to others. Breaks occurring at any of these essential points may damage the mentality and affect the behavior. The medical approach has so far been most successful in the study of those breaks in the physiological essential, as is to be expected. Defects of the brain, injuries, physical diseases, disorders due to the use of drugs, to biochemical disturbances, and the like--all interfere with normal function and behavior. Breaks in the essentials on the social level, because of the complexities of the processes, are more difficult to study. Progress in this field is also slower because the realization of the significance of social fac-

ters is more recent.

Abnormality of behavior and mentality is not easy to define. It is difficult to point out any physical or social acts which in themselves are evidences of insanity. Interpretations of the normality of actions must be made with reference to the cultural setting. Many actions of natives of preliterate societies, normal in their own cultures, would be regarded as evidence of insanity in our society. Actions which are normal in one culture are abnormal in others. This generalization is even true of such variations in culture as may be seen within one large nation. For example, certain types of religious fanaticism are normal in parts of the rural sections of southern states, while the same behavior might almost be the occasion for commitment to a hospital in a northern city.

The normality of actions may depend on considerations not always obvious to casual observation. Such eccentric behavior as attempting to push a peanut along a sidewalk with the nose may appear insane, until it is discovered that the performer is a college student being hazed, or the loser of an election bet. The definition of insanity, then, must not be a description of any list of particular actions, but must consist of some statement of the lack of fitness between actions and situations. In the summary of a mental examination of a patient, a psychiatrist writes, "The patient evidenced a feeling of happiness and well-being not at all warranted by her surroundings." Showing happiness, of course, is not abnormal, but when entirely uncalled for in the situation, it is regarded as evidence of insanity.

Many of the terms used to describe some of the functional psychoses show this definition of abnormality, namely, that it is only in the relation between action and situation. The concept, delusion, for example, refers not simply to a false belief, but to a false belief which a reasonable person would not hold. There are a great many false beliefs held by groups of normal persons. These beliefs are held because the persons have not had the opportunity to learn better, or because the authority of tradition or of religion is behind them. These have sufficient explanation. They become delusions only when the situation does not offer an explanation.

Such forms of mental abnormality as schizophrenia, then, must be defined in terms of the relationship between actions and

situations. But it is not always easy to say exactly what the actual situation is. Persons do not simply respond to the immediate environment of physical objects. The external world of physical reality is always transformed by the person; he reacts not to the world but to his conceptions of it. The act of perception itself is never independent of much selection and interpretation. The person responds to his axiological world, that is, one which is constructed by himself out of material which is culturally given to him, but always fashioned individually by him and inevitably somewhat differently from all other persons.

The situation to which the action is relative, then, is not the surroundings of physical reality or even the conventional view of it, but the individual's axiological version, which, though ordinarily built on the conventional view, always contains portions entirely individual. No two persons see the same situation, then, even among normal persons, but their situations are sufficiently similar and in accord with conventional patterns to enable them to act in reasonable harmony.

Actions of persons become unintelligible to one another, as we have seen, if they come from very different societies. But even within one culture there may be great separation of minds. Different socio-economic strata contain divergent conceptions of surroundings. Wall Street is entirely different for the banker and the banana-peddler. The slum dwellers, immigrants, mobile persons, and other such types, all have different conceptions of the world, but not always too different for others to understand. Often, however, uneducated natives of this country believe the foreigner to be slightly queer--perhaps touched with insanity. Children are especially likely to make these judgments of foreigners unless contacts with them are sufficiently frequent to give familiarity.

A series of life-experiences of an unusual character may produce a mental organization in the person which is so different from all others that his actions may be unintelligible to others. Persons who grow up in a harmonious and consistent culture cannot understand or communicate with disorganized persons who have very different axiological worlds. The actions appear to be senseless, the moods and emotions meaningless, and the words without significance. The disorganized person often senses his failure to communicate and decides that the effort is hopeless. Ordinary words

and phrases, limited in what they can describe by conventional usage, are incapable of bearing the meanings felt by him. He may attempt to transmit his meanings by the use of metaphors or he may give up the effort entirely and fall back on his inner life, indifferent to other persons. Metaphorical speech and allusions can bear communication only if there is sufficient similarity in the axiological worlds of both persons. If this condition is not fulfilled, this form of communication fails even more than simpler speech. The disorganized person appears to be even more senseless than he really is. His actions appear more capricious and unmotivated and inappropriate to his surroundings. Mental disorder, therefore, lies in the great divergence between the person's axiological world and the standardized cultural view of the world. The evidence presented below indicates that this is the explanation of schizophrenia. The divergence between the world of the person, and the standard cultural view of the world, is the result of isolation of the person from the intimate, sympathetic, personal contacts which are essential to normality.

The definitions of schizophrenia in the standard textbooks of psychiatry vary somewhat in detail but the disagreement does not appear to be very great. The descriptions of this form of insanity generally include such symptoms as the following: apathy and indifference, lack of contact with reality, disharmony between mood and thought, stereotyped attitudes, ideas of reference, delusions, illusions, hallucinations, impaired judgment, lack of attention, generally intact memory, lack of insight, defects of interest, seclusive make-up, hypochondriacal notions, negativism, and autistic thinking. There are also numerous physical symptoms listed, upon which there is much less agreement and more doubt as to their essential connection with schizophrenia. Another characteristic which is stated to be common to all or nearly all schizophrenics is the seclusive, or "shut-in" personality. The schizophrenic appears to prefer to be alone, to shun companionship, to lack sociability. It seems quite probable that this seclusiveness is the essential trait of the schizophrenic, and that the other symptoms follow from it.

The "apathy and indifference" and the "inappropriate emotional states," for example, which are common among the schizophrenics, may be seen as merely forms of unconventionality. In the mind of the patient events have a significance different from the

conventional, due to the fact of his seclusiveness. The emotions are inappropriate to the surroundings as viewed by his observers, but not to his surroundings as interpreted in his own mental organization. This and all the other forms of eccentricity of the schizophrenic may be due merely to the fact that his seclusiveness has cut him off from the social process which enforces conformity with the patterns of thought and action and feeling which are conventional and therefore normal, intelligible, and appropriate.

The "lack of contact with reality" has sometimes been interpreted as a "flight from reality," or intentional escape from a "reality" which is too unpleasant to be endured. But, as was stated above, no persons face "reality" in any absolute sense. Normal persons deal with a conventional, not a metaphysically "real" world. Abnormal persons are not fleeing from "reality" but are separated from conventionality. This may be more accurately stated as due to an "indifference to communication" or in some cases a failure to communicate. Actions of normal persons are conventional only because they are able to participate in the primary group life of their communities. The order that can be detected in human minds is principally the result of the necessity to communicate with those friends and neighbors. As long as a person wishes to appear sensible, and fears gossip, ridicule, and the sneers of his fellows, he must accept the roles defined for him by his community, and must think and feel in harmony with the attitudes and sentiments of his neighbors. To most normal persons this conformity is second nature. It is so much a part of their habits that they do not sense the social control that has molded them and continues to enforce conformity with the patterns. When anything interferes with these forms of social control, there is nothing to keep the actions of the person conventional. When there is no longer any necessity or desire to communicate with others, or to appear reasonable to them, there is nothing to preserve the order in the mental life of the person. "Indifference to communication," then, allows eccentricity to develop, only because it is merely the necessity to communicate with, and appear sensible to, other persons which preserves the "order" of a normal mind. This feature is thus to be regarded as a consequence of the seclusiveness of the schizophrenic.

"Illogical thought" is another result of the same seclusiveness. This term also is probably not accurately descriptive, in

that it implies that the patient has lost the ability to use logic. The real truth is that he is indifferent to logic because he has no need for it, or perhaps that he is beyond hope of being aided by it. Logic is a means of communication that has use in a special type of co-operative inquiry, and is useless to one whose actions are no longer co-ordinated with those of other persons. It must also be recognized that most normal persons have dreams and day-dreams and indulge in thinking which involves little or no logic. What logic they do use is made necessary by the desire to be understood. When there is no such desire, and no hope of being understood, there is no need for the use of logic. Again, it must be remembered that this does not imply that there is no order in the mental life of the schizophrenic. It might be said that the patient has a special "logic" of his own, but that it is difficult to discover.

Similarly the false beliefs, or delusions, of the schizophrenics are better understood if considered as mere unconventional behavior. Few persons exist who have never held false beliefs. It is not the fact that his beliefs are false that makes the schizophrenic conspicuous; it is the fact that he is alone in his belief. If three hundred persons at a camp meeting see and hear the devil, they are not called schizophrenic. But if a person is certain that he is pursued by a devil which no one else can see, he is said to have a "delusion." Further intensive inquiry into these delusions often shows that, although the person is in error, he is usually not without some basis for his belief. If he feels that he is being persecuted, it is frequently true that he suffers repeated failures, but his view of his situation is likely to be distorted. If he feels electricity going through his body, it may be true that he feels something but is mistaken in thinking that it is electricity. If he hears voices calling him names, he is sometimes able to distinguish them from voices calling out loud; they are often, in fact, a sort of "silent whisper." The interpretation may be false, but the basis for the abnormality is not its falseness but its unconventionality. One young male schizophrenic interviewed during the course of this study explained what he meant when he stated that he was John Barrymore. He stated that the experience is much the same as the identification many persons feel with a compelling performance of an actor at a play or motion picture when they take the role of the actor in the imagination. He made it clear that the state-

ment that he "really is John Barrymore" was merely a very strong metaphorical expression, used because the ordinary method of communicating the experience seemed insufficient. In this case, then, the experience was not a "delusion," although it appeared to be because the method of description he used was not adequate. The misunderstanding was due to unsuccessful communication, and was a consequence of the eccentricity that is an inevitable consequence of seclusiveness. Similarly, patients reporting such auditory hallucinations as "hearing voices" have been able to describe their report as a metaphorical effort to transmit the strength of the experience. The "voices" that speak to them generally accuse them of acts which they really did perform. Thus one fifteen-year-old boy who had been locked up on a charge of theft heard voices which called him "jail-bird," and a young girl who had been the victim of rape heard voices calling her "whore." The phenomenon of conscience is too common to be called abnormal. The abnormality in these cases lies only in the defectiveness in the communication, which appears to be a consequence of seclusiveness.

If the above hypothesis is correct--that the varied "symptoms" of schizophrenia are all traits of distortion and misunderstanding that are consequences of the failure of a seclusive personality to communicate effectively with normal persons--the problem of explanation consists in isolating the process which is responsible for the development of the seclusiveness.

It has already been pointed out that sociability does not develop without participation in normal primary groups. If there are any innate tendencies to sociability, they are insufficient to produce a sociable personality without aid from a properly functioning social environment.

Lack of sociability, which characterizes the seclusive personality, has been considered by some to be due to an innate personality defect or to some constitutional lack. It can be shown, however, that many schizophrenics were at one time sociable and fond of companionship. An examination of one hundred and one consecutive cases of schizophrenia in the records of the Rhode Island State Hospital revealed that twenty-seven were definitely reported to have been normally sociable in their childhood. Only twenty-one were reported never to have been sociable. In the remaining fifty-three cases, there was not enough evidence to decide the fact. The cases reported as formerly sociable did not merely lose their socia-

bility without apparent cause, but as a result of a typical social process in which they became excluded and isolated without wishing to become so. Most of them continued their efforts to be sociable after a period of exclusion, and abandoned the efforts only after it seemed unlikely that they might succeed. The final stage was the acceptance of defeat, change of interests, and creation of systematic rationalizations of their predicaments. This acceptance of failure to mix with others and communicate successfully and the consequent development of an isolated personality type makes the person less acceptable to others than before, and more than ever liable to exclusion, and in the case of boys especially, more liable to actual persecution. Thus an automatic "vicious circle" type of process of interaction between the seclusive personality and the intolerant normal persons has the effect of increasing the isolation indefinitely. It is the hypothesis of this paper that isolation not originally of the person's own choosing begins the process that leads to schizophrenia, and the "vicious circle" action develops the difficulties to the stage of abnormality.

Evidence of the effect of isolation on normal persons lends weight to this isolation hypothesis of schizophrenia. There are some cases on record of prisoners who have developed seclusive personality traits after a period of solitary confinement. Maurice Small, in a study of isolation, reports that long-term prisoners usually show little joy when their sentences expire, and that it is not uncommon for them to express a desire to return to their cells.¹ Such an outcome may be less common in modern prisons where much social life within the walls is encouraged, and where solitary confinement is less frequently used, and used for shorter periods than formerly.

Viera Figner, who was imprisoned several months in a Russian prison where she was isolated except for brief visits, writes of her loss of sociability.² After some months she lost her desire to have visitors, even her mother. She no longer wanted to talk; she had to summon all her strength of will to speak when she received

¹Maurice Small, "On Some Psychical Relations of Society and Solitude," Pedagogical Seminary, VII, No. 2 (April, 1900), 42.

²Viera Figner, Memoirs of a Revolutionist (New York, 1927), p. 29.

the infrequent visits from her mother. Hobhouse and Brockway state that the effect of the separation of prisoners and the silence rule was to bring about a high rate of insanity.¹ Ives reports the same experience at Pentonville prison when the solitude treatment was tried, about the middle of the last century.² The eccentricities the prisoners developed were of various sorts, but they were nearly all described as "thoughtful, subdued, and languid."

Sheep-herders and other isolated persons are said to develop similar traits after a long period of solitude. Gettys states that the typical herder in Texas avoids companionship and does not like to converse with others, and is generally cross and irritable.³

Most schizophrenics, however, have been neither prisoners nor sheep-herders. Spatial separation is not the only form of isolation that appears to be able to cause the development of a seclusive personality type. Any factor which acts as a barrier to intimate and sympathetic social contacts may apparently have this effect. Krueger and Reckless present a case of a boy who was told that he had an ugly mouth.⁴ He had not noticed it before, but he looked in a mirror, decided it must be true, and became sensitive, touchy, unsure of himself. When anyone looked at him he wanted to run. He did not believe anybody could really like him. It is typically this sort of experience which defines the role of a person--a casual remark, and adjustment in the inner life, events likely to pass unnoticed even by his most intimate associates. It is not remarkable that these associates are able to see no explanation for the personality change in the situation and experience of their friend, and are disposed to believe that there must have been some constitutional breakdown.

Kimball Young presents a case of a young boy who became sensitive about his appearance because of acne on his face.⁵

¹S. Hobhouse and A. F. Brockway, English Prisons Today (London, 1922), p. 583.

²George Ives, History of Penal Methods (New York, 1914), pp. 186-87.

³C. A. Dawson and W. E. Gettys, An Introduction to Sociology (New York, 1929), p. 605.

⁴E. T. Krueger and W. C. Reckless, Social Psychology (New York, 1931), p. 340.

⁵Kimball Young, Source Book for Social Psychology (New York, 1927), pp. 360-61.

The boy became despondent, afraid of ridicule, convinced that he was regarded as disfigured and inferior. He avoided making friends and distrusted those who approached him, for he felt that it must be impossible for anyone to like him for himself and so was convinced that they must have some ulterior motives. In high school he gained the reputation for being snobbish and aloof, although he always longed to be intimate with his schoolmates. Ordinarily, however, such cases as these do not become serious enough to develop into real "shut-in" types. They make friends in time, perhaps much more slowly than most persons, but usually are able to gain sufficient social contacts. But if they happen to be in a situation in which it is much more difficult to establish social contacts, even for a very sociable person, this type of person may never succeed. In the mobile rooming-house districts and hobo areas in the large cities, and in the slums, it might be so difficult that a person who once develops a little sensitivity, or becomes uncertain of his status, may never be able to re-establish intimate social contacts, and thus be as isolated as the prisoner in his solitary confinement cell, and with a similar result.

In the records of the schizophrenic cases used in this study, the relationship between the isolating factors in the experience of the persons and the eccentric behavior is frequently apparent. The role that the disorganization which is characteristic of the central parts of the city plays is also visible in many of the case histories. A few summaries of these cases will be sufficient to illustrate these relationships.

A Jewish boy lived with his mother and sister in a neighborhood invaded by Negroes. The family was unable to move out because they inhabited the rear portion of the millinery shop which the mother owned and operated. Peter, the boy, refused to play with the Negro boys in the neighborhood, and consequently had no playmates other than his younger sister. He spent most of his spare time in the home, and became interested in indoor amusements, music, reading, and motion pictures. Because of his association with his mother and sister, and lack of association with any males, he acquired a somewhat effeminate personality. He did not develop a taste for outdoor sports, nor any sort of athletic skill.

Peter's school record was satisfactory until an illness caused him to lose a year. He decided not to return, as he felt unhappy about being a grade behind his younger sister; so quit school after the second year of high school. For a period he drifted from job to job, frequently quitting such occupations as filling station attendant, elevator operator, and the like, because he felt that there was no future in such work.

After a period of unemployment Peter enrolled in the navy and was sent to a training station. As this was his first experience at mixing with men on such a scale, he was very unsuccessful as a member of the station group. He objected to the type of language the other sailors used, and as a consequence became the butt of much teasing and practical joking. Once, when in desperation he defended himself, he was knocked out by another sailor. His unhappiness was intense, and he tried to obtain a release from the navy, without success.

Following more persecution, Peter made some threats of suicide, and twice climbed the signal tower to jump off. A technical ground was then found for an honorable discharge.

After his release Peter was still unable to find employment and became even more depressed and spoke occasionally of suicide. At home he became more quarrelsome and irritable. He began to develop a "philosophy" of admiration of the grandeur of nature, as a substitute for the Jewish religion.

Because of trouble with his eyes, Peter began to go to a clinic for tests and treatment. He began reporting ailments for which the physicians could find no organic basis. One day he refused to return because a nurse gave him a bottle and asked for a sample of urine. The physicians then advised his mother to send him to a hospital for mental disorders. His diagnosis at this hospital was schizophrenia.

In the above case of Peter, the important community factor related to his eccentricity was the fact that the white family was isolated in the midst of a Negro neighborhood. As a consequence, an essential part of Peter's informal education for life was lacking, so that when he finally was forced to take his place among males of his own age he was totally unprepared and unable to make a success of it. His feeling of persecutions were not simple delusions--he was actually persecuted in the navy. His eccentricity consisted mainly of his bewilderment at the persecution, and the suspicious imagination of it where it did not exist. As a basis for this inaccurate imagination he had the obvious fact of his economic and social failures, and had no opportunity to understand the real reasons for them.

Helen, a Negro woman from a Mississippi rural district, came to Chicago at the age of twenty-four. She had attended school for a few years in childhood, and had married at an early age and had two children. Her husband died when she was twenty-three years old. She came to the city directly from this simple community, and lived for a short time with a sister. Soon she began drifting from place to place in the city, living alone, and earning her income doing housework by the day.

After a few years of this drifting she began to live with a preacher of a primitive religious sect which opposed the use of medicines. Helen enjoyed the shouting and other ecstatic behavior of the church meetings and became absorbed in this religious life, and in reading the Bible.

After a year of living with the preacher, Helen was deserted. She became morose and irritable, and would sit still and

refuse to talk. At times she would become angry at small annoyances. She accused her brother and other persons of mistreating her, using abusive and obscene language. She was committed to a mental hospital, where she was diagnosed a schizophrenic.

The mobility, insecurity, and strange existence of the city life contrasted sharply with the more placid and comfortable experiences in the rural community of Mississippi. Although Helen finally found a supposedly firm rock to anchor to--that is, the preacher and his religion--she suffered an unusually severe jolt when this solidity suddenly vanished. She could have no basis for estimating people, or the world, after that experience.

In the following case an isolating factor appears in the family relations, which affects the later development because it affects the role of the person in the community. This original trait that develops in the family is the pampered, overprotected, "spoiled child" personality. A child with such traits is almost certain to be teased, or even rejected, as a "sissy" in the neighborhoods where other boys are interested in rough activities. In this case of Jim, as in many others studied, it is clear that there is no original lack of sociability, or no innate seclusiveness, in his personality. For years his behavior consists in pathetic attempts to establish successful social relationships. These attempts fail, not because he does not have his heart in them, but because he never developed sufficient knowledge of how to do it. The lack of knowledge was the result of his unwished-for isolation.

Jim was a normal, plump, and pink-haired baby who was adored and spoiled by both his parents. His mother was so fond of his curly pink hair that she let it grow in long curls, and sent him to school with these still uncut. The result was immediate teasing and rejection by the other boys at school. He would return home crying and seeking comfort from his mother. Even after his hair was cut, and his father attempted to teach him to play outdoor games he failed to establish normal social relations with the neighborhood boys. He was too far behind in skills, and his role was already defined. He came to spend all of his spare time at home, reading and playing with his younger sister.

After leaving school Jim worked at various jobs, at the office-boy level. He was occasionally discharged for lying or other petty dishonesty. He became more secretive, and did not confide in his parents. He stole small amounts of money from his mother as well as from his employers. It was later discovered that he used this money mainly to buy candy, which he offered to boys of his own age that he knew at his places of employment, and for other attempts to entertain them, such as motion pictures, and rentals of cars. Although the other

boys accepted these offers, no satisfactory friendships resulted. Jim complained to his family that the home was not properly furnished, and that he was ashamed to bring his friends in. Jim's efforts to succeed increased, and he spent more money, renting large expensive cars.

Once, after being caught embezzling money from the firm, Jim was questioned by his employer, who asked why he took the money. Jim answered that he did not know, and gave the same answer to the question of how he spent it. The employer suggested to Jim's father that he be taken to a mental hospital for an examination. The father agreed, thinking a scare would reform Jim. At the hospital Jim wept, refused to answer questions or to speak to his parents, and stated that they "railroaded" him to the hospital. He was held there and diagnosed as a schizophrenic.

Of the one hundred and one cases studied at the Rhode Island State Hospital, there were forty-eight which contained sufficient data to reveal the isolating factors. Of these, twenty-nine, or about sixty per cent, were reported to have been "spoiled children" and to have gone through a sequence of persecution resembling that of Jim in the case described above.

There was also in these Rhode Island cases four in which there was no evidence of the "spoiled child" personality, but, instead, of a very prudish character resulting from very strict moral and religious training. These persons grew up with such a slight and vague knowledge of sex, and such an attitude of abhorrence toward it, that their first experiences of any sort pertaining to sex resulted in eccentric and unconventional reactions. Often internal sensations of sex stimulation resulting from an approach by a member of the opposite sex are not clearly understood or recognized for what they are, but are interpreted as an influence proceeding from the other person. These interpretations appear as delusions of being influenced by electricity, or gas, or poison, or "thought-waves." The persons taking this attitude are apparently so thoroughly convinced that sex is an evil impossible to their natures that these feelings could not come from inside. The "delusion" is apparently the best explanation they can make in view of their convictions. It is of course possible, and perhaps probable, that some of these persons have a real suspicion that the feelings do originate within themselves, but since they are trained to repugnance for such feelings, their statements consist of desperate attempts to deny it to themselves as well as others.

In addition, there were in the Rhode Island cases four which showed hallucinations and delusions which were apparently due to isolation brought on by deafness. Other cases showed such

isolating factors as the inability to speak English, not being allowed by strict parents to play with other children, and sensitivity because of disfiguring physical deformities.

Apparently any factor which interferes with social contacts with other persons produces isolation. The role of an outcast has tremendous effects on the development of the personality. Lack of sufficient self-confidence and the consciousness that others do not desire one's company may act as a serious barrier to intimate social relations. The individual who feels that he is conspicuously ugly, inferior, or in disgrace may be isolated through this conception of himself.

These traits such as prudishness, "spoiled child" personality, and others which may originate in the family, may possibly be distributed fairly evenly through the population. The variations of schizophrenia rates in the different parts of the city are most likely due not to a differential distribution of these traits, but to a variation in the nature of the community in which these personalities must find a place. In certain types of residential neighborhoods there may be a sufficient proportion of tolerant children who can accept and co-operate with the variant personalities, and eventually assimilate them into the normal groups and educate them out of their eccentricities. The persecution which isolates is most likely to be found in the disorganized slum areas where a high proportion of the boys are delinquent, and interested in rough activity. The intolerance of boys is greatest for members of other races and nationalities than their own. It has been pointed out above that the rates for schizophrenia are highest for those groups which are in the minority in an area; that is, the rates of the white populations are much higher in the Negro area than the rates for Negroes in the same area.

Schizophrenia, then, appears to be eccentric behavior that results from an inability to understand and be understood by other persons, which is a consequence of an exclusion and isolation of such a degree and duration that an essential part of the education in the ways of human nature is lacking. The conditions which produce this isolation are greatest in the disorganized central regions of the city.

It must be recognized that little of this evidence is conclusive by itself, and that the strength of the case for the above interpretations must lie in the convergence of evidence. In view

of evidence supporting entirely different hypotheses it is necessary to recognize that there may be more than one type of disorder which is called schizophrenia, and that some types may have more of an organic basis. It is also possible that schizophrenia has precipitating factors of an organic nature that combine with other social factors such as described above to produce the eccentricity. Whatever the final formulation, it seems clear from the above evidence that social disorganization must play a very significant part in the causation of schizophrenia.

